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EXAMINER				
CIRIC, LJILJANA V				
ART UNIT		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/583,912

**Applicant(s)**

MULLER ET AL.

**Examiner**

Ljiljana (Lil) V. Ciric

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**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-32 is/are pending in the application.
- 4a) Of the above claim(s) 19-22 and 26-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17, 18, 23-25 and 30-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2010 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 06/20/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Election/Restrictions**

1. Applicant's election with traverse of the first species or the embodiment of Figures 1A through 1J (readable on claims 17, 18, 23 through 25, and 30 through 32) in the reply filed on December 3, 2010 is acknowledged. The traversal is on the grounds that: (a) "the present invention contains various embodiments of a single inventive concept"; (b) "all species contain the features presently recited in claim 17 which is currently generic to all of the species"; (c) "the Applicant believes that claim 17 is allowable and consequently all species of the invention should be prosecuted in one and the same application for efficiency reasons"; (d) "all of the species of the invention represent similar ways of obtaining the same desired results disclosed within the application". These are not found persuasive because: (a) the various species and embodiments thereof constitute different inventive concepts and not a single inventive concept as previously outlined in the election/restriction requirement which was mailed on August 17, 2010; (b) the fact that a single claim, claim 17, is generic to all of the disclosed and claimed species is not indicative of there being a single inventive concept; (c) claim 17 has not been found by the examiner to be allowable as noted in greater detail below; and, (d) that all of the species "represent similar ways of obtaining the same desired results" is not sufficient proof that all of the species as claimed form a single general inventive concept.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 19 through 22 and 26 through 29 are hereby withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to the various nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on December 3, 2010.

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3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### **Drawings**

4. The replacement drawings were received on January 5, 2010. These drawings are hereby still objected to as noted in greater detail below.

5. The drawings filed on January 5, 2010 are objected to because of the unevenness of some of the lines with some lines being markedly darker than others (and thus rendering the images depicted thereby less clear) and because impermissible black shading still exists in the various figures, the latter being particularly true with regard to Figures 1C, 1D, 1E, 1F, 1G, 1H, 1J, 2C, 5B, 6B, 7B, 8A, and 8B. Note that it may be easier to correct the drawings properly by making all lines of equal (and lighter) quality and by furthermore separating at least the larger figures onto separate sheets of paper in order to enlarge the images shown thereby. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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6. The drawings filed on January 5, 2010 are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sealing elements located between the thermal elements and the interface plate as recited in claim 30, the sealing means as recited in claim 31 must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawings filed on January 5, 2010 are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "(3a-o)" has been used to designate both a connection means (see claim 17, line 6, and other occurrences) and at least one interface plate (see claim 17, line 9, and other occurrences in the claims; also see at least paragraph [044] of the specification). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as

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either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### Specification

8. The abstract of the disclosure is objected to because it does not avoid referring to the purported merits and speculative uses of the inventive apparatus (i.e., in the first and last sentences, respectively), because it does not avoid phrases which can be implied (i.e., "The invention relates to"), and because it does not avoid legal phraseology normally reserved for claims (i.e., "comprises"). Correction is required.

See MPEP § 608.01(b).

9. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

10. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The

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abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

11. The title of the invention (i.e., "Heat Exchanger" is overly broad and thus not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
12. The substitute specification filed on June 20, 2006 has been entered because it conforms to 37 CFR 1.125(b) and (c).
13. The disclosure is objected to because of the following informalities: the substitute specification fails to avoid using legal phrasology normally reserved for claims (i.e., "comprising"; "said"; "means").

Appropriate correction is required.

#### **Claim Rejections - 35 USC § 112**

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 17, 18, 23 through 25, and 30 through 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and contain grammatical and idiomatic errors.

For example, it is not clear to which previously recited elements the term "each" [claim 17, line 3; claim 18, line 3], is intended to refer, thus rendering indefinite the metes and bounds of protection sought by the claims.

Also for example, there is insufficient antecedent basis for the following limitations in the claims, thus rendering indefinite the means and bounds of protection sought by the claims: "said thermal

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element" [claim 17, line 4]; "said frigories" [claim 17, line 5]; "the calories and/or frigories" [claim 17, lines 7-8]; "said exterior circuit" [claim 17, line 15]; "two interface plates" [claim 26, line 2]; and, "the sealing means" [claim 31, lines 1-2].

Also, for example, it is not clear to which one of the previously recited "at least two...elements" [claim 17, lines 2-3] the limitation "said thermal element" [claim 17, line 4] is intended to refer, thus further rendering indefinite the metes and bounds of protection sought by the claim and all claims depending therefrom. The limitation "said interface plate" [claim 17, line 13; claim 18, line 2; claim 23, lines 2-3; claim 25, lines 2-3; claim 30, line 3] also fails to clearly refer to a particular one of the one or more previously recited interface plates (i.e., "at least one interface plate"), thus similarly rendering the claims indefinite.

Regarding base claim 17 as well as all claims depending therefrom, the word "means" is preceded by the word "connection" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word "connection" preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Also as an example, plural alternative limitations in the claims further render the metes and bounds of protection sought by the claims indefinite.

16. Claims 17, 18, 23 through 25, and 30 through 32 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: any structure or means which renders the thermal elements capable of emitting calories and/or frigories as recited in the claims and/or a magneto-calorie material within the thermal elements in combination with a magnetic field which is generated to operate the magneto-calorie type thermal elements.

**Claim Rejections - 35 USC § 102**



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17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(c) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

18. As best can be understood in view of the indefiniteness of the claims, claims 17, 23 through 25, and 30 through 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Wada et al.

Wada et al. discloses a heat exchanger essentially as claimed, including, for example: at least one group of two thermal elements 10A and 10B (see Figure 8) or 10A' and 10B' (see Figure 10) as well as at least one interface plate or partition 83 as well as at least one closing plate at least broadly readable on one of the longitudinal sides of container 80 which is superimposed on the interface plate or partition 83 as shown in Figure 10.

The reference thus reads on the claims.

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19. As best can be understood in view of the indefiniteness of the claims and alternately for claims 17, 23 through 25, and 30 through 32, claims 17, 18, 23 through 25, and 30 through 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Pfister et al.

Pfister et al. (especially Figures 4 and 5) discloses a heat exchanger or heat exchanger system 100 essentially as claimed, including, for example: at least one group of two of thermal elements 24'; connection means including at least two interface plates 16 and 52 as shown in Figure 4; and, sealing elements or means 70 as shown in Figure 5.

The reference thus reads on the claims.

### **Conclusion**

20. The additional prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric whose telephone number is 571-272-4909. The examiner works a flexible schedule, but can normally be reached weekdays between 10:30 a.m. and 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy J. Swann can be reached on 571-272-7075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

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Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ljiljana (Lil) V. Ciric/  
Primary Examiner, Art Unit 3785